2012 Consumer Confidence Report

Water System Name: *Kern Oil & Refining Co.* Report Date: July 1, 2013

We test the drinking water quality for many constituents as required by state and federal regulations. This report shows the results of our monitoring for the period of January 1 - December 31, 2012 and may include earlier monitoring data.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo ó hable con alguien que lo entienda bien.

Type of water source(s) in use: Ground water supply well

Name & location of source(s): Well #2 (KOR 6) (PS Code 1502771-002)
7724 East Panama Lane, Bakersfield, CA. 93307

Drinking Water Source Assessment information: Lower aquifer of the San Joaquin Valley Ground Water Basin

Time and place of regularly scheduled board meetings for public participation: Monthly safety meetings.
North and South Control Rooms, Maintenance Shop, and MCC Conference Room (when applicable).

For more information, contact: Tom Mele Phone: (661) 845-0761

TERMS USED IN THIS REPORT

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency (USEPA).

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Primary Drinking Water Standards (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Secondary Drinking Water Standards (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Regulatory Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Variances and Exemptions: Department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

ND: not detectable at testing limit

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion or micrograms per liter (µg/L)

ppt: parts per trillion or nanograms per liter (ng/L)

ppq: parts per quadrillion or picogram per liter (pg/L)

pCi/L: picocuries per liter (a measure of radiation)

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- *Microbial contaminants*, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Inorganic contaminants*, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- *Pesticides and herbicides*, that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- *Organic chemical contaminants*, including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- *Radioactive contaminants*, that can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the USEPA and the California Department of Public Health (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

Tables 1, 2, 3, 4, and 5 list all of the drinking water contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The Department allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative of the water quality, are more than one year old.

TABLE 1 – SAMPLING RESULTS SHOWING THE DETECTION OF COLIFORM BACTERIA

Microbiological Contaminants (complete if bacteria detected)	Highest No. of Detections	No. of months in violation	MCL	MCLG	Typical Source of Bacteria
Total Coliform Bacteria	(In a mo.)	0	More than 1 sample in a month with a detection	0	Naturally present in the environment
Fecal Coliform or *E. coli*	(In the year)	0	A routine sample and a repeat sample detect total coliform and either sample also detects fecal coliform or *E. coli*	0	Human and animal fecal waste

TABLE 2 – SAMPLING RESULTS SHOWING THE DETECTION OF LEAD AND COPPER

Lead and Copper (complete if lead or copper detected in the last sample set)	No. of samples collected	90th percentile level detected	No. sites exceeding AL	AL	PHG	Typical Source of Contaminant
Lead (ppb)	1	ND	0	15	0.2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (ppm)	1	ND	0	1.3	0.3	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

TABLE 3 – SAMPLING RESULTS FOR SODIUM AND HARDNESS						
Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected**	**Range of Detections**	**MCL**	**PHG (MCLG)**	**Typical Source of Contaminant**
Sodium (ppm)	2/5/2009	48 ppm		none	none	Salt present in the water and is generally naturally occurring
Hardness (ppm)	2/5/2009	83 ppm		none	none	Sum of polyvalent cations present in the water, generally magnesium and calcium, and are usually naturally occurring

**Any violation of an MCL or AL is asterisked. Additional information regarding the violation is provided later in this report.*

TABLE 4 – DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD						
SYNTHETIC ORGANIC CHEMICALS						
Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected**	**Range of Detections**	**MCL [MRDL]**	**PHG (MCLG) [MRDLG]**	**Typical Source of Contaminant**
Alachlor (ppb)	6/30/2005	ND		2	(0)	Runoff from herbicide used on row crops.
Atrazine (ppb)	6/30/2005	ND		1	(0.15)	Runoff from herbicide used on row crops and along railroad and highway right-of-ways.
Dibromo- chloropropane (DBCP) (ppb)	1/17/2013	ND		200	(1.7)	Banned nematocide that may still be present in soils due to runoff/leaching from former use on soybeans, cotton, vineyards, tomatoes, and tree fruit.
Ethylene Dibromide (EDB) (ppb)	1/17/2013	ND		50	(10)	Discharge from petroleum refineries; underground gas tank leaks; banned nematocide that may still be present in soils due to runoff and leaching from grain and fruit crops.
Simazine (ppb)	6/30/2005	ND		4	(4)	Herbicide runoff.
INORGANIC CONTAMINANTS						
Aluminum (ppb)	12/16/2011	ND		1	(0.6)	Erosion of natural deposits; residue from some surface water treatment processes.
Antimony (ppb)	12/16/2011	ND		6	(20)	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
Arsenic (ppb)	12/11/2012	6.4	2.6 – 6.4	10	(0.004)	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes.
Barium (ppb)	12/16/2011	58		1	(2)	Discharge from oil drilling wastes and from metal refineries; erosion of natural deposits.
Beryllium (ppb)	12/16/2011	ND		4	(1)	Discharge from metal refineries; coal-burning factories, and electrical, aerospace, and defense industries.
Cadmium (ppb)	12/16/2011	ND		5	(0.04)	Internal corrosion of galvanized pipes; erosion of natural deposits; discharge from electroplating and industrial chemical factories, and metal refineries; runoff from waste batteries and paints.
Chromium (ppb)	1/17/23	ND		50	(100)	Discharge from steel and pulp mills and chrome plating; erosion of deposits.

TABLE 4 (Continued) – DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD INORGANIC CONTAMINANTS						
Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected**	**Range of Detections**	**MCL [MRDL]**	**PHG (MCLG) [MRDLG]**	**Typical Source of Contaminant**
Copper (ppm)	2/5/2009	ND		AL= 1.3	0.3	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Fluoride (ppm)	12/16/2011	0.18		2.0	(1)	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.
Lead (ppb)	2/5/2009	ND		AL = 15	0.2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits.
Mercury (ppb)	12/16/2011	ND		2	(1.2)	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and cropland.
Nickel (ppb)	12/16/2011	ND		100	(12)	Erosion of natural deposits; discharge from metal factories
Nitrate (ppm)	1/17/2013	1.2		45 (as nitrate)	45 (as NO3)	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits.
Nitrite (ppm)	12/16/2011	ND		1 (as nitrogen)	1 (as N)	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits.
Perchlorate (ppb)	12/16/2011	ND		6	(6)	Perchlorate is an inorganic chemical used in solid rocket propellant, fireworks, explosives, flares, matches, and a variety of industries. It usually gets into drinking water as a result of environmental contamination from historic aerospace or other industrial operations that used or use, store, or dispose of Perchlorate and its salts.
Selenium (ppb)	12/16/2011	ND		50	(50)	Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additive).
Thallium (ppb)	12/16/2011	ND		2	(0.1)	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories.
Gross Alpha (pCi/L)	1/21/2013	2.77		15	(0)	Erosion of natural deposits.
VOLATILE ORGANIC CHEMICALS						
Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected**	**Range of Detections**	**MCL [MRDL]**	**PHG (MCLG) [MRDLG]**	**Typical Source of Contaminant**
Benzene (ppb)	6/24/2009	ND		1	0.15	Discharge from plastics, dyes and nylon factories; leaching from gas storage tanks and landfills.
Carbon tetrachloride (ppt)	6/24/2009	ND		500	100	Discharge from chemical plants and other industrial activities.

TABLE 4 (Continued) – DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD VOLATILE ORGANIC CHEMICALS						
Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected**	**Range of Detections**	**MCL [MRDL]**	**PHG (MCLG) [MRDLG]**	**Typical Source of Contaminant**
1,2-Dichloro- benzene (ppb)	6/24/2009	ND		600	600	Discharge from industrial chemical factories.
1,4-Dichloro- benzene (ppb)	6/24/2009	ND		5	6	Discharge from industrial chemical factories.
1,1-Dichloro- ethane (ppb)	6/24/2009	ND		5	3	Extraction and degreasing solvent; used in manufacture of pharmaceuticals, stone, clay and glass products; fumigant.
1,2-Dichloro- ethane (ppt)	6/24/2009	ND		500	400	Discharge from industrial chemical factories.
1,1-Dichloro- ethylene (ppb)	6/24/2009	ND		6	10	Discharge from industrial chemical factories.
Cis-1,2-Dichloro-ethylene (ppb)	6/24/2009	ND		6	100	Discharge from industrial chemical factories; major biodegradation byproduct of TCE and PCE groundwater contamination.
trans-1,2-Dichloro-ethylene (ppb)	6/24/2009	ND		10	60	Discharge from industrial chemical factories; minor biodegradation byproduct of TCE and PCE groundwater contamination.
Dichloromethane (ppb)	6/24/2009	ND		5	4	Discharge from pharmaceutical and chemical factories; insecticide.
1,2-Dichloro-propane (ppb)	6/24/2009	ND		5	0.5	Discharge from industrial chemical factories; primary component of some fumigants.
1,3-Dichloro-propene (ppt)	6/24/2009	ND		500	200	Runoff/leaching from nematocide used on croplands.
Ethylbenzene (ppb)	6/24/2009	ND		300	300	Discharge from petroleum refineries; industrial chemical factories.
Methyl-*tert*-Butyl Ether (MTBE) (ppb)	6/24/2009	ND		13	13	Leaking from underground gasoline storage tanks; discharge from petroleum and chemical factories.
Monochloro-benzene (ppb)	6/24/2009	ND		70	200	Discharge from industrial and agricultural chemical factories and dry cleaning facilities.
Styrene (ppb)	6/24/2009	ND		100	(100)	Discharge from rubber and plastic factories; leaching from landfills.
1,1,2,2-Tetrachloroethane (ppb)	6/24/2009	ND		1	0.1	Discharge from industrial and agricultural chemical factories; solvent used in production of TCE, pesticides, varnish and lacquers.
Tetrachloro-ethylene (PCE) (ppb)	6/24/2009	ND		5	0.06	Discharge from factories, dry cleaners, and auto shops (metal degreaser).
1,2,4-Trichlorobenzene (ppb)	6/24/2009	ND		5	5	Discharge from textile-finishing factories.
1,1,1-trichloro- ethane (ppb)	6/24/2009	ND		200	1000	Discharge from metal degreasing sites and factories; manufacture of food wrappings.

TABLE 4 (Continued) – DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD VOLATILE ORGANIC CHEMICALS						
Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected**	**Range of Detections**	**MCL [MRDL]**	**PHG (MCLG) [MRDLG]**	**Typical Source of Contaminant**
1,1,2-trichloro- ethane (ppb)	6/24/2009	ND		5	0.3	Discharge from industrial chemical factories.
Trichloroethylene (TCE) (ppb)	6/24/2009	ND		5	1.7	Discharge from metal degreasing sites and other factories.
Toluene (ppb)	6/24/2009	ND		150	150	Discharge from petroleum and chemical factories; underground gas tank leaks.
Trichlorofluoro-methane (ppb)	6/24/2009	ND		150	700	Discharge from industrial factories; degreasing solvent, propellant and refrigerant
1,1,2-Trichloro-1,2,2-trifluoro-ethane (ppb)	6/24/2009	ND		1.2	4	Discharge from metal degreasing sites and factories; dry cleaning solvent; refrigerant.
Vinyl Chloride (ppt)	6/24/2009	ND		500	50	Leaching from PVC piping; discharge from plastics factories; biodegradation byproduct of TCE and PCE groundwater contamination.
Xylenes (ppm)	6/24/2009	ND		1.750	1.8	Discharge from petroleum and chemical factories; fuel solvent.

TABLE 5 – DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD						
Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected**	**Range of Detections**	**MCL**	**PHG (MCLG)**	**Typical Source of Contaminant**
Sodium (ppm)	2/5/2009	48				
Hardness (total) as CaCO3 (ppm)	2/5/2009	83				
Calcium (ppm)	2/5/2009	26				
Magnesium (ppm)	2/5/2009	ND				
Odor – Threshold	2/5/2009	No Odor		3 TON		Naturally-occurring organic materials.
Total Dissolved Solids (TDS) (ppm)	2/5/2009	240		1000		Runoff/leaching from natural deposits.
Chloride (Cl) (ppm)	2/5/2009	15		250		Runoff/leaching from natural deposits; seawater influence.

Additional General Information on Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Summary Information for Violation of a MCL, MRDL, AL, TT, or Monitoring and Reporting Requirement

VIOLATION OF A MCL, MRDL, AL, TT, OR MONITORING AND REPORTING REQUIREMENT				
Violation	**Explanation**	**Duration**	**Actions Taken to Correct the Violation**	**Health Effects Language**
Nitrate Monitoring and Reporting Violation. Enforcement Letter No. 03-19-13E-031	Failed to sample the water system for nitrate in 2013.	One year.	The water system was sampled for nitrate on 1/17/2013. Sample result was 1.2 ppm. The water system was previously sampled on 12/16/2011. Sample result was 1.1 pm. Both results are well below the MCL for nitrate.	Infants below the age of six months who drink water containing nitrate in excess of the MCL may quickly become seriously ill and, if untreated, may die because high nitrate levels can interfere with the capacity of the infant's blood to carry oxygen. Symptoms include shortness of breath and blueness of the skin. High nitrate levels may also affect the oxygen-carrying ability of the blood of pregnant women.

For Water Systems Providing Ground Water as a Source of Drinking Water

TABLE 7 – SAMPLING RESULTS SHOWING FECAL INDICATOR-POSITIVE GROUND WATER SOURCE SAMPLES

Microbiological Contaminants (complete if fecal-indicator detected)	Total No. of Detections	Sample Dates	MCL [MRDL]	PHG (MCLG) [MRDLG]	Typical Source of Contaminant
E. coli	0	monthly	0	(0)	Human and animal fecal waste
Enterococci	N/A	N/A	TT	n/a	Human and animal fecal waste
Coliphage	N/A	N/A	TT	n/a	Human and animal fecal waste

Regulations allow Kern to monitor for some contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data used in this report are more than one year old. Sample dates for each chemical or constituents are provided in the Tables. Microbiological samples for Coliform Bacteria are taken every 30 days. Arsenic samples are taken every 30 days.

NOTE: Primary drinking water standards are mandatory health-related standards. Secondary standards are based on the aesthetic quality of the water. Both types of standards are established by the State of California Department of Health Services, Division of Drinking Water and Environmental Management, and the U.S. Environmental Protection Agency.

ARSENIC: While Kern's drinking water meets the federal and state standard for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. The U.S. Environmental Protection Agency continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems. Kern has installed a treatment equipment system to remove Arsenic to below the MCL.

If you have questions concerning the water supply, you should contact Tom Mele at 661-845-0761, the EPA's Safe Drinking Water Hotline at 1-800-426-4791, or the California Department of Public Health at 661-335-7315.

Bruce Cogswell

Bruce Cogswell, V.P. of Manufacturing

ATTACHMENT 7

Consumer Confidence Report
Certification Form

(to be submitted with a copy of the CCR)

Water System Name: Kern Oil & Refining Co.

Water System Number: 1502771

The water system named above hereby certifies that its Consumer Confidence Report was distributed on July 1, 2013 to customers (and appropriate notices of availability have been given). Further, the system certifies that the information contained in the report is correct and consistent with the compliance monitoring data previously submitted to the California Department of Public Health.

Certified by: Name: Bruce Cogswell

Signature: Bruce Cogswell

Title: V.P., Manufacturing

Phone Number: (661) 845-0761 Date: 7/17/13

To summarize report delivery used and good-faith efforts taken, please complete the below by checking all items that apply and fill-in where appropriate:

☐ CCR was distributed by mail or other direct delivery methods. Specify other direct delivery methods used: _____

_____

X "Good faith" efforts were used to reach non-bill paying consumers. Those efforts included the following methods:

- ☐ Posting the CCR on the Internet at www._____
- ☐ Mailing the CCR to postal patrons within the service area (attach zip codes used)
- ☐ Advertising the availability of the CCR in news media (attach copy of press release)
- ☐ Publication of the CCR in a local newspaper of general circulation (attach a copy of the published notice, including name of newspaper and date published)
- X Posted the CCR in public places: **Break Rooms, Mail Room**
- ☐ Delivery of multiple copies of CCR to single-billed addresses serving several persons, such as apartments, businesses, and schools
- ☐ Delivery to community organizations (attach a list of organizations)
- ☐ Other (attach a list of other methods used)

☐ *For systems serving at least 100,000 persons*: Posted CCR on a publicly-accessible internet site at the following address: www._____

☐ *For privately-owned utilities*: Delivered the CCR to the California Public Utilities Commission

This form is provided as a convenience and may be used to meet the certification requirement of section 64483(c), California Code of Regulations.